

### **REMARKS**

The present Amendment amends claims 1-10 and 12-14 and cancels claims 11 and 15-18. Therefore, the present application has pending claims 1-10 and 12-14.

In the Office Action it appears that the Examiner did not consider the references which were cited in the International Search Report as required since the present application is a PCT application. A copy of said search report and a PTO-1449 listing the references cited by the search report is attached for consideration by the Examiner. An indication that the references thereof have been considered is respectfully requested.

In paragraph 2 of the Office Action the Examiner acknowledges Applicants claim for priority but alleges that a certified copy of the priority document is required. The Examiner is respectfully informed that the present application is a PCT application. A certified copy of the priority document, upon which the PCT application is based, was filed with the Receiving Office (JPO) and a copy thereof should have been forwarded by the International Bureau to the United States Patent and Trademark Office when the present application entered the National Phase on September 10, 2001. In fact, an acknowledgement that such priority document has been received is indicated by the "Notification of Missing Requirements under 35 USC §371 in the United States Designed/Elected Office" mailed on July 10, 2001. The Examiner's attention is directed to said document. Thus, a certified copy of said document is not required.

The specification stands objected to due to informalities noted by the Examiner in paragraph 3 of the Office Action. Filed on even date herewith is a

Substitute Specification correcting the extraneous marks which existed in the originally filed application. It should be noted that the extraneous marks in the originally filed specification were in fact markings that occurred due to it being a copy of a faxed document. Entry of the Substitute Specification is respectfully requested.

Claims 1-10 and 12-14 stand rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regards as the invention. Various amendments were made throughout claims 1-10 and 12-14 to bring them into conformity with the requirements of 35 USC §112, second paragraph. Therefore, Applicants submit that this rejection is overcome and should be withdrawn.

Specifically, amendments were made throughout claims 1-10 and 12-14 to correct the informalities noted by the Examiner in paragraph 5 of the Office Action.

The Examiner's cooperation is respectfully requested to contact Applicants' Attorney by telephone should any further indefinite matters be discovered so that appropriate amendments may be made.

Claims 1, 2 and 12-14 stand rejected under 35 USC §102(e) as being anticipated by Tiedemann (U.S. Patent No. 6,396,867); claim 3 stands rejected under 35 USC §103(a) as being unpatentable over Tiedemann in view of Chen '458 (U.S. Patent No. 6,067,458); claim 4 stands rejected under 35 USC §103(a) as being unpatentable over Tiedemann in view of Honkasalo (U.S. Patent No. 5,995,496); claim 5 stands rejected under 35 USC §103(a) as being unpatentable over Tiedemann in view of Chen '925 (U.S. Patent No. 6,512,925); claim 6 stands rejected under 35 USC §103(a) as being unpatentable over Tiedemann in view of

Soliman (U.S. Patent No. 6,101,179); and claims 7-10 stand rejected under 35 USC §103(a) as being unpatentable over Tiedemann in view of Gilhousen (U.S. Patent No. 5,056,109). These rejections are traversed for the following reasons. Applicants submit that the features of the present invention as now recited in claims 1-10 and 12-14 are not taught or suggested by Tiedemann, Chen '458, Honkasalo, Chen '925, Soliman and Gilhousen whether taken individually or in combination with each other as suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw these rejections.

The present invention is directed to a method, mobile station and communication system wherein the mobile station itself controls its transmission power based upon a transmit power controlling signal sent from the radio base station. According to the present invention, upon receipt of the transmit power controlling signal from the radio base station, the mobile station generates a reference value for calculating a control amount of transmission power for the mobile station based on the received transmit power controlling signal and the quality of the received transmit power controlling signal. This reference value is then used to generate a variation amount of the transmit power of the mobile station so that the transmit power of the mobile station is controlled according to the variation amount.

The above described features of the present invention now more clearly recited in the claims are not taught or suggested by any of the references of record whether taken individually or in combination with each other. Particularly, the above described features of the present invention are not taught or suggested by

Tiedemann, Chen '458, Honkasalo, Chen '925, Soliman and Gilhousen whether taken individually or in combination with each other as suggested by the Examiner.

The primary reference being relied upon by the Examiner is Tiedemann. Tiedemann discloses a method for controlling the transmit power of a radio base station. In Tiedemann, the mobile station measures the power of transmit power controlling signals received from a radio base station, generates download transmit power controlling signals based on the measured transmission power of the transmit power controlling signals from the radio base station and transmits the generated downward power controlling signals to the radio base station. Tiedemann teaches that the radio base station upon receipt of the downward transmit power controlling signals from the mobile station changes the power of the signals being transmitted thereby based on the downward transmit power controlling signals received from the mobile station.

As is quite clear from the above, the present invention is entirely different from that taught by Tiedemann being that the present invention is directed to controlling the transmission power of the mobile station itself, whereas Tiedemann is directed to controlling the transmission power of the radio base station. These are totally opposite entities having different considerations as well understood by those of ordinary skill in the art.

Therefore, Tiedeman fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Particularly, Tiedemann fails to teach or suggest transmitting, by the radio base station, a transmit power controlling signal for controlling transmit power of the mobile station, and generating, by the

mobile station, a reference value for calculating a controlling amount of transmission power for the mobile station based on the received transmit power controlling signal from the radio base station and the receiving quality thereof as recited in the claims.

Thus, as is quite clear from the above, Tiedemann fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Therefore, reconsideration and withdrawal of the 35 USC §102(e) rejection of claims 1, 2 and 12-14 as being anticipated by Tiedemann is respectfully requested.

The above noted deficiencies of Tiedemann is also evident in each of the remaining references utilized by the Examiner particularly Chen '458, Honkasalo, Chen '925, Soliman and Gilhousen. Therefore, combining the teachings of Tiedemann with anyone or more of Chen '458, Honkasalo, Chen '925, Soliman and Gilhousen would still fail to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the various rejections of claims 3-10 under 35 USC §103(a) based on the combinations of Tiedemann with one or more of Chen '458, Honkasalo, Chen '925, Soliman and Gilhousen is respectfully requested.

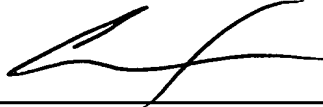
The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references utilized in the rejection of claims 1-10 and 12-14.

In view of the foregoing amendments and remarks, Applicants submit that claims 1-10 and 12-14 are in condition for allowance. Accordingly, early allowance of claims 1-10 and 12-14 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (566.39819X00).

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

A handwritten signature in black ink, appearing to read 'Carl I. Brundidge', is written over a horizontal line.

Carl I. Brundidge  
Registration No. 29,621

CIB/jdc  
(703) 312-6600

**FORM PTO-1449 U.S. Department of  
Commerce (Rev. 4/92) Patent and Trademark  
Office**

**566.39819X00**

**09/786,459**

**APPLICANT**  
**K. TSUNEHARA, et al**

**FILING DATE**  
**September 10, 2001**

**GROUP  
2684**

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

# U.S. PATENT DOCUMENTS

[illegible]

## FOREIGN PATENT DOCUMENTS

[illegible]

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

				RECEIVED
				JUL 27 2004

**EXAMINER**

**DATE CONSIDERED**

Technology Center 2600

**EXAMINER:** Initial if citation is considered, draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

(Form PTO-1449 [6-4])



(51) 国際特許分類7 H04B 7/26	A1	(11) 国際公開番号 WO00/38355  (43) 国際公開日 2000年6月29日(29.06.00)
(21) 国際出願番号 PCT/JP99/07174  (22) 国際出願日 1999年12月21日(21.12.99)  (30) 優先権データ 特願平10/362871 1998年12月21日(21.12.98) JP  (71) 出願人 (米国を除くすべての指定国について) 株式会社 日立製作所(HITACHI, LTD.)(JP/JP) 〒100-8220 東京都千代田区神田駿河台四丁目6番地 Tokyo, (JP) ケイディディ株式会社(KDD CORPORATION)(JP/JP) 〒163-8003 東京都新宿区西新宿二丁目3番2号 Tokyo, (JP) (72) 発明者 ; および (75) 発明者 / 出願人 (米国についてのみ) 恒原克彦(TSUNEHARA, Katsuhiko)(JP/JP) 矢野 隆(YANO, Takashi)(JP/JP) 雅楽隆基(UTA, Takaki)(JP/JP) 〒185-0014 東京都国分寺市東恋ヶ窪一丁目280番地 株式会社 日立製作所 中央研究所内 Tokyo, (JP) 鈴木俊郎(SUZUKI, Toshiro)(JP/JP) 〒244-0003 神奈川県横浜市戸塚区戸塚町216番地 株式会社 日立製作所 通信システム事業本部内 Kanagawa, (JP)	鈴木利則(SUZUKI, Toshinori)(JP/JP) 〒163-8003 東京都新宿区西新宿二丁目3番2号 ケイディディ株式会社内 Tokyo, (JP) (74) 代理人 弁理士 富田和子(TOMITA, Kazuko) 〒220-0004 神奈川県横浜市西区北幸2丁目9-10 横浜HSビル7階 Kanagawa, (JP)  (81) 指定国 AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, 欧州特許 (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI特許 (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG), ARIPO特許 (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM)  添付公開書類 国際調査報告書	

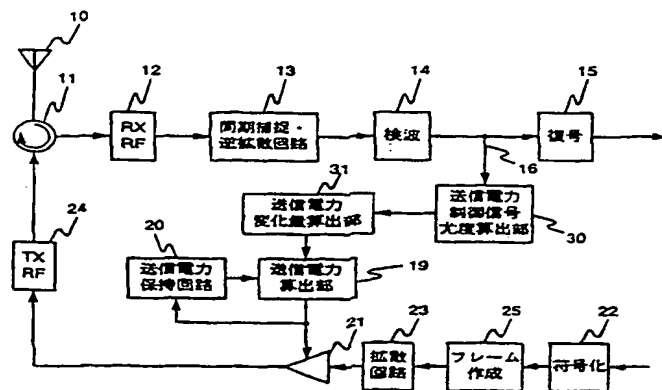
COPY

(54)Title: METHOD FOR CONTROLLING TRANSMISSION POWER FOR COMMUNICATION SYSTEM

(54)発明の名称 通信システムの送信電力制御方法

## (57) Abstract

A method for controlling the transmission power for a CDMA mobile communication system so as to reduce the influence of error control. The likelihood of a transmission power control signal transmitted from a radio base station is determined based on the transmission power control signal and the quality of reception, and the variation of the transmission power is found based on the likelihood, thereby controlling the transmission power of a mobile terminal based on the variation.



- 13 ... SYNCHRONISM CAPTURING/SPREAD SPECTRUM CIRCUIT
- 14 ... DETECTION
- 15 ... DECODING
- 31 ... SECTION FOR CALCULATING VARIATION OF TRANSMISSION POWER
- 30 ... SECTION FOR CALCULATING LIKELIHOOD OF TRANSMISSION POWER CONTROL SIGNAL
- 20 ... TRANSMISSION POWER HOLDING CIRCUIT
- 19 ... SECTION FOR CALCULATING TRANSMISSION POWER
- 23 ... SPECTRUM SPREADING CIRCUIT
- 25 ... FRAME CREATION
- 22 ... ENCODING



# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP99/07174

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> H04B7/26, 102

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> H04B7/26-7/26, 102  
H04Q7/00-7/38

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP, 6-13956, A (Mitsubishi Electric Corporation), 21 January, 1994 (21.01.94) (Family: none)	1, 2, 7, 8, 10, 12, 13, 14
A		3-6, 9, 11, 15, 16
X	JP, 10-173593, A (NEC Corporation), 26 June, 1998 (26.06.98) (Family: none)	11, 15-18
A		3
X	WO, 91/7037, A1 (Qualcomm Inc.), 16 May, 1991 (16.05.91) & US, 5056109, A & EP, 500689, A	1, 2, 7, 8, 10, 12, 13, 14
A	& JP, 4-502841, A	3-6, 9, 11, 15, 16



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
07 March, 2000 (07.03.00)

Date of mailing of the international search report  
21 March, 2000 (21.03.00)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

## A transmission power control apparatus for a mobile communication system

Patent Number: ☐ EP0847146, A3  
Publication date: 1998-06-10  
Inventor(s): ENDO HIROYA (JP); YAHAGI MASAHIKO (JP)  
Applicant(s):: NIPPON ELECTRIC CO (JP)  
Requested Patent: ☐ JP10173593  
Application Number: EP19970120739 19971126  
Priority Number(s): JP19960325679 19961205  
IPC Classification: H04B7/005 ; H04B7/216  
EC Classification: H04B7/005B2E  
Equivalents: CN1185706, JP3039402B2, ☐ US6035210

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### Abstract

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A transmission power control apparatus capable of reducing interference, in a mobile communication adopting the CDMA system, with other communications by decreasing transmission power in one direction of channel taking communication quality of other channel of direction into account is provided. A reverse channel error rate judgment section for judging a communication quality of the reverse channel by a reverse channel frame error rate detected and a forward channel error rate judgment section for judging a communication quality of the forward channel by a forward channel frame error rate reported by a mobile terminal are provided in the radio base station. The forward channel error rate judgment section, when detected, reports the state of communication degradation of own direction of channel to the reverse channel error rate judgment section which, in turn, controls to instruct the mobile terminal to decrease transmission power of the reverse channel. When communication degradation is detected by the reverse channel error rate judgment section, the state is reported to the forward channel error rate judgment section to control to decrease transmission

power of the forward channel. 

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## TRANSMISSION POWER CONTROLLER IN MOBILE COMMUNICATION AND ITS SYSTEM

Patent Number: JP6013956  
Publication date: 1994-01-21  
Inventor(s): MURAI HIDESHI; others: 01  
Applicant(s):: MITSUBISHI ELECTRIC CORP  
Requested Patent: ☐ JP6013956  
Application Number: JP19920171363 19920629  
Priority Number(s):  
IPC Classification: H04B7/26 ; H04B17/00  
EC Classification:  
Equivalents: JP2991862B2

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### Abstract

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**PURPOSE:** To increase the capacity of the system by implementing accurate transmission power control at a mobile set side.

**CONSTITUTION:** A control processor 32 detects received power and the reception power is calculated from a strength of a pilot signal fed from a searcher receiver 30 in this case. Thus, the signal strength of a transmission signal from a base station from which a mobile set is communicated is accurately detected. Furthermore, a fading speed is estimated from a change in the received power thereby controlling an averaging time in a transmission power controller 28. Thus, the system copes even with a change in the fading speed and the optimum averaging time is always obtained. Then an electric field median strength is always detected without causing a response delay and accurate transmission power control is attained.

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## METHOD AND APPARATUS FOR CONTROLLING TRANSMISSION POWER IN A CDMA CELLULAR MOBILE TELEPHONE SYSTEM

Patent  
Number: US5056109

Publication  
date: 1991-10-08

Inventor(s): GILHOUSEN KLEIN S (US); PADOVANI ROBERTO (US); WHEATLEY III CHARLES E (US)

Applicant(s):: QUALCOMM INC (US)

Requested  
Patent: ☐ US5056109

Application  
Number: US19890433031 19891107

Priority  
Number(s): US19890433031 19891107

IPC  
Classification: H04B7/204 ; H04J13/00 ; H04L27/30

EC  
Classification: H04B7/005B1, H04B7/005B6, H04Q7/32E

Equivalents: AU646001, AU6728390, BR9007826, CA2072989, CN1025402B, CN1035591B, CN1053870, CN1090107, CN1159720, DE69032105D, DE69032105T, ☐ EP0500689 (WO9107037), A4, B1, ES2113862T, FI922083, GR3026454T, HK1010077, IL96218, JP2776632B2, JP4502841T, ☐ MX172367, NO304206B, SG48360, ☐ WO9107037, ZA9008859

### Abstract

A power control system for a cellular mobile telephone system in which system users communicate information signals between one another via at least one cell site using code division multiple access spread spectrum communication signals. The power control system controls transmission signal power for each cellular mobile telephone in the cellular mobile telephone system wherein each cellular mobile telephone has an antenna, transmitter and receiver and each cell-site also has an antenna, transmitter and receiver. Cell-site transmitted signal power is measured as received at the mobile unit. Transmitter power is adjusted at the mobile unit in an opposite manner with respect to increases and decreases in received signal power. A power control feedback scheme may also be utilized. At the cell-site communicating with the mobile unit, the mobile unit transmitted power is measured as received at the cell-site. A command signal is generated at the cell-site and transmitted to the mobile unit for further adjusting mobile unit transmitter power corresponding to deviations in the cell site received signal power. The feedback scheme is used to further adjust the mobile unit transmitter power so as to arrive at the cell-site at a desired power level.

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